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Meeting Report
No. PL/1967/M/3

REPORT OF THE

SECOND SESSION OF THE NEAR EAST PLANT PROTECTION COMMISSION

Held at Tripoli, Libya
6-13 May 1967

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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Rome, 1967

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I. INTRODUCTION

The Near East Plant Protection Commission was established by Resolution No. 40/63 of the Twelfth Session of the FAO Conference held in 1963. The First Session of the Commission was convened at Jubeiheh-Amman, Jordan, from 7 to 14 June 1965 (Meeting Report PL/1965/11). Twelve governments in the Near East Region were then members of the Commission, namely: Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Pakistan, Saudi Arabia, Somali Republic, Sudan, Syria and the United Arab Republic. Subsequently, in September 1965, the Government of Yemen also joined the Commission.

The Second Session of the Commission was convened at Tripoli, Libya, from 6 to 13 May 1967, through the courtesy of the Government of the Kingdom of Libya. Invitations for representation in the Session were extended by the Director-General of FAO to all the fourteen governments in the Region as well as to those of France and the United Kingdom, in the hope that those that had not joined the Commission might do so by the time the Second Session opened. Invitations to depute observers were also extended to the League of Arab States, to the Governments of Cyprus, Ethiopia, Malta, Turkey and the U.S.A., and the United Nations Development Programme.

Inauguration

The Second Session of the Near East Plant Protection Commission was inaugurated by Dr. A.R. Sidky, Assistant Director-General of FAO for Near East Affairs. Thereafter, His Excellency Mr. Mohamed Bek Derna, Minister of Agriculture and Animal Wealth, welcomed the participants. His Excellency expressed deep appreciation of the Food and Agriculture Organization of the United Nations for convening such meetings as that of the Commission, as part of its commendable endeavours to combat food shortages by helping to increase and protect agricultural production. The Government of Libya attached great importance to the country's agriculture and His Excellency had no doubt that the Commission's Session would provide opportunities to the countries of the Region to exchange views and experience in the field of plant protection. However, while great advances had been made, a considerable amount of research, investigations and hard work was still required, not only in Libya and the Region but in many parts of the world, before the full benefits of plant protection could be realized.

Welcoming the delegates and the observers on behalf of the Director-General of FAO, Dr. Sidky pointed out that, while there had been some respite from the desert locust during the two years since the First Session of the Commission, there had been none as far as other plant pests and diseases were concerned. Damage to crops continued to be heavy, thereby making great demands on the national plant protection services. It was not enough, Dr. Sidky continued, to make extensive use of pesticides to control plant pests and diseases, the Region must also have the established means to take the fullest advantage of new and modern developments in plant protection methods. Such developments could be best studied and exploited on a regional rather than national basis and for this purpose it was most important to establish the Near East Plant Protection Institutes on different subjects in different countries of the Region, as already recommended by earlier FAO meetings. It was also important to assess crop losses sustained through pests and diseases, and to determine the impact of plant protection on agricultural production. Such an impact could substantially augment the quantity and sometimes improve the quality of the harvested produce and thereby also help to realize the full benefits of other inputs in farming, such as the use of water and fertilizers. Dr. Sidky concluded by expressing, on behalf of

FAO, thanks to the Government of the Kingdom of Libya for acting as the official host to the Second Session of the Near East Plant Protection Commission and to His Excellency the Minister of Agriculture and Animal Wealth for addressing the opening Session.

Officers of the Commission

Mr. Othman Gerbi, Under-Secretary, Ministry of Agriculture and Animal Wealth, Libya, and head of the Libyan delegation, was unanimously elected Chairman and Dr. Mohamed M. Ibrahim, Director-General, Plant Protection Department, Ministry of Agriculture, U.A.R., and Head of the U.A.R. delegation, Vice-Chairman. Mr. Uthman Ridha Ali, Director of the Plant Protection Division in Iraq and Mr. Heshamul Huque, Joint Director, Department of Locust Warning and Plant Quarantine of Pakistan, were elected Members of the Executive Committee. Dr. K.B. Lal of FAO served as Technical Secretary.

Adoption of the Agenda

The Provisional Agenda, as circulated earlier, was adopted with the addition of a sub-item (IX) under item 7, namely "Other pests and diseases, notably of citrus and groundnut." (See Appendix C.)

The adoption of the Agenda was preceded by a discussion on its content and scope. The view was expressed that in future Sessions of the Commission, the Agenda should concentrate on a few major problems in the Region, instead of attempting to review the entire field of plant protection, so that they could be dealt with by delegates who were also specialists. Another view was that the Agenda should be so designed as to lead to recommendations on policy issues based on technical considerations. It was pointed out that the Agenda aimed at providing a fairly wide variety of subjects for consideration, each important in its own way, though all may not necessarily be discussed in great detail. It was also not desirable to use the entire Session to discuss only one or two problems in all their technical and other aspects, as done in symposia or seminars, and to restrict the scope of the discussions.

The Commission accepted the view that the Provisional Agenda, as presented for adoption, provided opportunities for the consideration of a wide variety of problems and that it was open to any Session to concentrate attention only on such of the items as may appear to it important. However, to facilitate such attention in future Sessions of the Commission, the item dealing with Special Plant Pest and Disease Problems in the Region should be limited to a few important problems of plant protection to be discussed in detail.

II. PARTICIPATION IN THE SESSION

Delegations of Participating Governments

Iran

Dr. AZIM ZOMORRODI	Director, Plant Quarantine Service Ministry of Agriculture Teheran

Jordan

Mr. JAWAD DAOUDI	Technical Assistant Under-Secretary Ministry of Agriculture Amman
Mr. AHMAD KHASAWNEH	Director of Plant Protection Ministry of Agriculture Amman

Libya

Mr. OTHMAN GERBI	Under-Secretary Ministry of Agriculture and Animal Wealth Sidi Mesri Tripoli
Mr. ABDULMAJEED BEN SAAD	Director, Plant Protection Department Ministry of Agriculture and Animal Wealth Sidi Mesri Tripoli
Mr. ABDULGADER SHERIF	Director, Agricultural Research Department Ministry of Agriculture and Animal Wealth Sidi Mesri Tripoli
Dr. ALI KALED	Director, Plant Protection Sub-Department Ministry of Agriculture and Animal Wealth Sidi Mesri Tripoli
Mr. AHMED A. GEZIERI	Director, Plant Protection Sub-Department Benghazi
Mr. ABDURAMAN RAWHY	Consultant, Plant Quarantine Expert to the Libyan Delegation Tripoli
Dr. ENRICO PUCCI	Consultant, Chief, Tripolitania Phytopathological Section Sidi Mesri Tripoli

Libya (continued)

Dr. ALFONSO DAMIANO	Consultant, Chief, Tripolitania Entomological Section Sidi Mesri Tripoli

Pakistan

Mr. HESHAMUL HUQUE	Joint Director Department of Locust Warning and Plant Quarantine Ministry of Agriculture and Works Karachi

Saudi Arabia

Mr. I.Y. MUKIM	Entomologist Ministry of Agriculture and Water Riyadh
Dr. HENRY E. MARTIN	Entomologist FAO Technical Adviser Riyadh

Sudan

Mr. HASSAN A. AHMED	Entomologist Plant Protection Division Ministry of Agriculture Khartoum North

United Arab Republic

Dr. MOHAMED MAHMOUD IBRAHIM	Director-General Plant Protection Department Ministry of Agriculture Dokki
Mr. AHMED H. RIDA	Director-General Plant Quarantine Administration Plant Quarantine Alexandria
Dr. MOSTAFA HAFEZ	Head, Biological Control and Insect Identification Investigations Plant Protection Department Ministry of Agriculture Dokki

Observers

League of Arab States

Mr. MOHAMMED HUSSEIN	Agriculture Adviser Department of Economics Arab League Cairo

United Nations Development Program

Mr. AFTAB H. ZAKI	Deputy Resident Representative in Libya Tripoli

FAO Staff

Dr. A.R. SIDKY	Assistant Director-General for Near East Affairs FAO Regional Office for the Near East Cairo U.A.R.
Dr. DHIA AHMED	FAO Country Representative in Libya Tripoli
Dr. K.B. LAL	Regional Plant Protection Specialist FAO Regional Office for the Near East Cairo U.A.R.
Dr. E.J. BUYCKX	Agricultural Officer (Plant Protection) Plant Production and Protection Division FAO, Rome Italy
Dr. MAHMOUD S. ATTIA	Regional Adviser for Vegetable Improvement and Seed Production FAO Regional Office for the Near East Cairo U.A.R.

III. PRESENT STATUS OF THE COMMISSION

At the time of its Second Session, the following thirteen governments had become members of the Near East Plant Protection Commission:

MEMBERSHIP OF THE NEAR EAST PLANT PROTECTION COMMISSION FOR 1967

Country	Date of Instrument of Adherence	Date of Receipt of Instrument
Iran	7 September 1964	17 December 1964
Iraq	6 February and 22 June 1964	3 July 1964
Jordan	13 July 1964	7 August 1964
Kuwait	20 July 1964	27 July 1964
Lebanon	3 June and 6 July 1964	7 July 1964
Libya	28 November 1964	7 December 1964
Pakistan	15 December 1964	31 December 1964
Saudi Arabia	8 June 1964	19 August 1964
Somali Republic	2 May 1965	11 May 1965
Sudan	25 July 1964	30 July 1964
Syrian Arab Republic	2 July 1964	8 July 1964
United Arab Republic	23 May 1964	5 June 1964
Yemen	16 September 1965	20 September 1965

The wish was earnestly and unanimously expressed that the Government of Afghanistan would also join the Commission.

IV. THE COMMISSION AND ITS WORK: 1965-1967

A statement of the activities of the Commission during 1965-1967 was presented by the Secretariat. (Appendix D).

The Commission was disappointed to note that no meeting of the Executive Committee had been held because no financial provision had existed to cover the travel costs of its members. The Committee was intended to function actively and this would not be possible unless it met. The Commission hoped that at least one meeting of the Committee will be convened well before its third Session and that FAO would be able to find the necessary funds for the purpose.

The Commission viewed with satisfaction the regular appearance of the bi-monthly reports on Plant Pest and Disease Situation in the Near East Region, issued from the FAO Regional Office in Cairo since January 1963. However, their country coverage had been far from adequate because of the lack of basic information. Although efforts had been made to include in the reports information derived from any authentic source so as to enhance their usefulness, the fact remained that most countries had sent in their information only occasionally and a few not at all. The Commission reiterated its conviction, expressed in its first Session, that the reports would be of great value to plant protection workers and others in the Region and directed that they should continue to be issued at bi-monthly intervals. It, therefore, urged the member governments to actively cooperate in this endeavour and suggested that the directors of plant protection could be made responsible for the regular supply of information to its Secretariat in Cairo.

The Commission was informed that lists of plant pests and diseases had been prepared in several countries of the Region and were under preparation in some others. Some of them were crop enumerations and some also gave additional information about distribution, periods of attacks, alternate hosts and economic importance. Some lists had been nationally published in different ways. Altogether there was a mass of information available which needed to be collected, sifted, checked, compiled and edited. The Commission appreciated that all this would entail heavy work and take time to accomplish but hoped that the proposed Plant Quarantine Unit of the proposed Near East Plant Protection Institute, if and when established in Karachi, would undertake it. Meanwhile, the beginning already made by the Secretariat should be continued with the collaboration of the League of Arab States and the Ministry of Agriculture, U.A.R. The Commission also urged its member countries to continue their cooperation in the preparation of the lists.

Regarding the establishment of the various units of the proposed Near East Plant Protection Institute, the Commission's comments are given in a separate section of this report.

V. CURRENT SITUATION AND RECENT DEVELOPMENTS IN PLANT PROTECTION IN THE REGION

Delegations from the member countries presented the following information concerning plant pests and diseases of major importance, control measures and methods, new legislation relating to plant protection, surveys and training for the two-year period since the last Session (June 1965-May 1967).

1. IRAN

The Sunn pest (Eurygaster integriceps) remains one of the most important pests of cereals in Iran. Losses on wheat have been fluctuating since 1939 from 10 to 30 percent in the provinces of Teheran, Isfahan and Shiraz. Due to the application of both chemical and biological control measures, the infestation has been substantially reduced in several regions. Another species, Aelia furcula, attacks wheat in eastern and western Iran, appearing in April and May, later than the Sunn pest. Chemical control measures were applied.

The Moroccan locust (Dociostaurus maroccanus) has not caused any appreciable damage since 1958, but survey and control teams are maintained in certain regions, where control was carried out in 1966 over about 100,000 acres.

Control measures were required against Sesamia cretica on maize and Pseudaletia (Cirphis) unipuncta was observed for the first time in Iran in 1962 on rice.

Cotton cultivation is expanding continually and so have been its pest control problems. It appears now that Earias insulana causes the greatest losses, followed by, in decreasing order of importance, Heliothis obsoleta, Laphygma exigua, Euxoa segetum, Pectinophora malvella, Bemisia gossypiperda, Epitetranychus urticae, Thrips favus and Aphis gossypii. At the end of the harvesting period, losses caused by the spiny bollworm were reaching 20-30 percent in the north. Emergency measures were taken to save the crop. In 1966 Pakistan and U.S.S.R. assisted by sending planes to provide aerial spraying for the control of the spiny bollworm in the north. Cotton and cotton seed are not allowed to be carried out of the infested region, unless they have been fumigated with methyl bromide. After harvest, all cotton plants and wild host plants are destroyed.

On sugar bee, Laphygma exigua remains the most destructive pest. This noctuid also attacks soya, tomato and eggplant. Insecticides are used to control this pest. Other economically important insect pests of sugar beet are Spodoptera exigua, Gonorrhynchus brevirostris and Ulobaris loricota.

Among the pests of fruit trees, Cydia (Laspeyresia) pomonella is the most important, attacking pear, apple, apricot, nuts and occasionally peach and pomegranate. Other pests of fruit trees are Lepidosaphes sp., Hyponomeuta padella, Stephanitis pyri, Bryobia praetiosa, Rugoloscolytus mediterraneus, Psylla pyricola, Aphis pomi and Rhagoletis cerasi. Chemicals are used for the control of these pest.

In line with the development of agriculture in Iran, the Government is implementing important measures to strengthen its plant protection services. Provision has been made in the 5-year Plan for the yearly appointment of 50 agronomists. Legislative measures are being adopted to ensure control of plant pests and diseases. Adequate dusting and spraying equipment, and a small fleet of agricultural aeroplanes are available in the country. Extension work on pest and disease control has been undertaken by the Ministry of Agriculture. The cost of some control operations is met by the Government and of others by the farmers.

2. JORDAN

The Plant Protection Division of the Ministry of Agriculture has been increasingly confronted in the past years with the pest and disease problems of citrus. Virus diseases are the most important, but surveys have been conducted so far only in the Jordan Valley and in the coastal area, where exocortis virus and xyloporosis have been found. The use of resistant rootstock to avoid some of these diseases is now recommended.

Among the insect pests, scales (Chrysomphalus ficus, Aonidiella aurantii, Ceroplastes floridensis), mites (Phyllocoptruta oleivora, Tetranychus spp.) and the Mediterranean fruit fly cause heavy damage. Organophosphorus compounds have been successfully used against scale insects and mites, while fenthion alone or with protein hydrolysate gave good control of Ceratitis capitata. As a result of the effectiveness of these specific pesticides, a country-wide spraying campaign is being undertaken in the citrus growing area. The costs will be shared by the Government and the farmers.

Nematodes cause considerable damage to many crops in the Jordan Valley. The root-knot nematodes, Meloidogyne spp., appear to be economically the most important. Research on their biology and control has been initiated, but present control measures are restricted to soil application of nematocides in vegetable fields and in nurseries of olive seedlings.

The main pests of olive trees are Dacus oleae, a psyllid, Euphyllura olivina, and borers. Country-wide campaigns are carried out against the olive fly with satisfactory results.

Tomato and potato losses are mainly caused by virus diseases and fungi. Planting tolerant or resistant varieties and applications of fungicides are the recommended control measures.

Resistance to pesticides has so far been observed only in cutworm to toxaphene.

The economic importance of virus diseases and nematodes is increasing every year and research on their transmission and propagation and the development of control methods are badly needed. It is expected that the establishment of the Plant Pathology and Nematology Unit of the proposed Near East Plant Protection Institute, for the establishment of which assistance of the United Nations Development Programme has been requested, will help to solve these problems.

A Plant Quarantine and Plant Protection Law is under consideration. Fumigation chambers have been set up at two border quarantine stations.

Two refresher, training courses were held for plant protection personnel.

3. LIBYA

The Plant Protection Department of the Ministry of Agriculture and Animal Wealth has been strengthened considerably. Since 1964, it has been established as a central service for the country as a whole, with sub-departments in Tripolitania, Cyrenaica and Fezzan, and stations covering the entire cultivated area. The Department is responsible for research and surveys on plant pests and diseases and the methods of their control, as well as for work on pesticides and quarantine. The Government subsidises the sale of pesticides and application equipment to farmers and fruit growers.

The following pests and diseases have been of major importance:

(a) Pests and diseases of major importance

Mediterranean fruit fly	(*Ceratitis capitata*)	on citrus, other fruits and pepper
Black citrus aphid Privet mite Citrus bud mite	(*Toxoptera aurantii*), (*Brevipalpus obovatus*), (*Aceria scheldoni*)	on citrus
Two-spotted red mite	(*Tetranychus telarius*)	on citrus and other plants
Olive fruit fly Olive bud scale	(*Dacus oleae*), (*Pollinia pollinii*)	on olive
Green peach aphid	(*Myzus persicae*)	on peach and tobacco
Onion thrips	(*Thrips tabaci*)	on onion
Cotton leafworm	(*Spodoptera littoralis*)	on many hosts, mostly vegetables
Mole cricket	(*Brachytrupes megacephalus*)	on almond, pear, apple
Tomato russet mite	(*Aculus lycopersici*)	on tomato
Fusarium wilt Root knot nematode	(*Fusarium oxysporum*, *f. lycopersici*), (*Meloidogyne* sp.)	on tomato
Fusarium wilt	(*Fusarium oxysporum*)	on water melon
Fusarium spp.	(*f. oxysporum*, *f. solani* *f. scirpi*, etc.) and (*Rhizoctonia solani*)	on groundnut
Blue mould	(*Peronospora tabacina*)	on tobacco
Downy mildew	(*Peronospora schleideni*)	on onion
	(*Heterodera avenae*)	on barley

(b) Some pests and diseases which have caused varying degrees of damage

Durra stem borer	(*Sesamia cretica*)	on maize
Cotton aphid Citrus flower moth	(*Aphis gossypii* and *Prays citri*)	on citrus
Codling moth	(*Cydia pomonella*)	on pear and apple
Bean aphid	(*Aphis fabae*)	on broad beans
Imported cabbage worm Cabbage aphid	(*Pieris rapae* and *Brevicoryne brassicae*)	on cabbage

12-spotted melon beetle Cotton aphid	(Epilachna chrysomelina, Aphis gossypii and Agrotis spp.)	on melon and water melon
Psorosis		on citrus
	(Mauginiella scattae)	on date palm
	(Aspergillus niger, A. flavus and Rhizopus sp.)	on groundnut

Some recently discovered but still strictly localized pests have been Prays citri and Glomerella cingulata on lemon, Cenopalpus pulcher on quince and Monilinia laxa on almond. The occurrence of xyloporosis and psorosis A viruses and of the latter's strains known as concave gum, blind pocket and infectious variegation, has been suspected on the basis of symptoms only.

Large-scale control campaigns were conducted against the olive bud scale, groundnut cricket, potato late blight, tobacco blue mould and the groundnut damping off. The pesticides generally used have been dimethoate, malthion, dipterex, sevin, aldrin, tedion, kelthane, BHC, zineb, captan TMTD, white oil and sulphur. Several herbicides have been tested, including 2,4-D esters in barley fields, dalapon, ATA and paraquat in citrus orchards and ATA and simazole in olive plantations.

Hitherto, plant protection activities have been governed by the law, Sanitary Control of Plants No. 76, 1958. A new Plant Protection Law, however, is in its final stages of Government approval. This Law deals with plant protection, seeds and other propagating materials, chemical pesticides, international plant quarantine, national plant quarantine and legislative and transfer rules. Quarantine inspections of growing plants in the countries of origin, the products of which are to be imported into Libya, are carried out. A new plant quarantine station is already established at Benghazi, which is responsible for the work at the sea and air ports and at Musaad Customs center at the border with the U.A.R. A similar station at Tripoli (a new one is to be established in 1968) takes care of the sea and airports and of the Customs center at Zuara bordering Tunisia. Two other points of entry of plant materials are at Ghadames on the south-western border with Algeria and Tunisia, and at Ghat on the south-western border with Algeria. A plant quarantine isolation garden in Tripoli is planned.

Several plant protection officers have received training abroad in various fields of plant protection. Plant quarantine personnel has been given in-service training. A training course in crop protection and another specifically in locust control was held for some officials of the Extension Department.

4. PAKISTAN

The Department of Locust Warning and Plant Quarantine continued to be the national organization for plant protection in the country. The total area under cultivation is 63.01 million acres on which a large variety of crops is grown. Lists of insects and mites, plant diseases, plant parasitic nematodes and weeds of agricultural importance have been prepared and the first one has been circulated in the Region.

In addition, rodents have assumed considerable economic importance because of the damage they cause in the field, in storage and in the house. Some of the more destructive rodents in West Pakistan are Gerbillus indicus (antelope rat), G.

hurrianae (barn rat), G. erythura, Nesokia hardweckii (mole rat), Rattus rattus, R. norvegicus and Mus musculus. Apart from poison-baiting and other methods of rodent control normally undertaken, the intention is to intensify research and training in this field.

The importance of nematodes in agriculture has been increasingly realized. Surveys have been conducted and much useful information on the incidence and distribution of nematodes has been collected. Over sixty species belonging to twentysix genera have been listed for West Pakistan alone. Soil treatments with nematocides are considered expensive and thorough surveys of individual areas are necessary before the treatment can be applied on field scale. It is, however, believed that cultural and rotational measures and the use of resistant crop varieties can supplement chemical control, provided further work to evaluate their effectiveness is undertaken.

Weeds are also a serious problem, particularly in irrigated areas and in East Pakistan. The reduction in the yields of food crops, caused by weeds is estimated to reach 10 percent, in individual fields it may be as high as 80 percent. The more injurious weeds are Cyperus difformis, C. rotundus, Paspalum distichum, Echinochola colonum, Sorghum halpense, Asphodelus tenuifolius, Carthamus oxycantha, Onicus arvensis, Argemone mexicana, Eichhornia crassipes (in East Pakistan only), Orobanche sp., Cuscuta sp. and Striga sp., the last three being parasitic, flowering plants. Field trials with various herbicides have been in progress. Stam F. 34, Rogue and Surcopur have proved useful in rice fields; the combined application of Atrazine/Ametryne with 2,4-D as a post-emergence spray and of Kuron as pre-emergence spray has been effective in sugarcane fields. Some new chemicals, such as, Actril-P and Trefflan, are being tried in wheat and cotton fields, respectively. Mechanical removal of weeds is extensively practised but is expensive and laborious and also ineffective for complete control over large areas.

During the period under review, the Department of Locust Warning and Plant Quarantine conducted various aerial and ground control operations. The latter consisted of spraying, dusting, fumigating, poison-baiting, seed treatment and removal of stubbles. The pesticides used were sevin, malathion, diazinon, dipterex, metasystox, parathion, endrin, tedion, Kelthane, phosdrine, BHC, Sumithion, DDT, toxaphene, E.D.C.T. mixture, copper-A, Zerlate, Fermate, Cupravit, Tiezene Blue and Dithane M-45. Aerial spraying was conducted over the four major crops of sugarcane, cotton, rice and jute, whenever the situation so demanded, and nearly 700,000 acres were treated in both wings of the country. Likewise, about 1,100,000 acres of orchards were treated with pesticides from the air. These operations brought sudden and widespread outbreaks of pests under swift control. The aerial unit of the Department is being further strengthened to cover even larger areas during the coming years.

The Toxicology and Pesticides Division of the Department has been moderately provided with some very useful and modern equipment to determine pesticidal residues on food and feed crops and work in this field has already been initiated. It is hoped that the work will help in prescribing appropriate tolerance limits for pesticides on crops. To prevent the indiscriminate use of pesticides and to ensure high standards of their effectiveness and of safety, a high-powered Pesticides Standardisation Committee has been constituted, which approves pesticides for use in the country. A comprehensive draft of a pesticides legislation has been under consideration by the Government.

Plant Quarantine rules and regulations have been revised in accordance with international quarantine requirements and issued in January 1967 under the title of "The Destructive Insects and Pests Rules, 1966, (Plant Quarantine)." A central laboratory for research and training has been set up at Karachi airport and the

establishment of two Postentry Plant Quarantine Stations at Karachi and Dacca, respectively, is under consideration. The Government has presented a request to the United Nations Development Programme (Special Fund) for assistance in the establishment of a Plant Quarantine Unit of the proposed Near East Plant Protection Institute. Refresher and in-service training courses have been organized for the plant quarantine staff. A 24-hour plant quarantine service is maintained at the international airports of Karachi and Dacca. Quarantine inspections of aircraft and passenger and cargo ships are undertaken.

SAUDI ARABIA

The Ministry of Agriculture and Water has recently been reorganized and the Plant Protection Division has become part of the Research and Agricultural Development Department. The Division is responsible for (1) conducting research on plant pests and diseases; (2) supervising plant protection research, locust research and plant quarantine stations; (3) identification of pests and plant diseases occurring in Saudi Arabia; (4) issuing recommendations to plant protection units and technical pamphlets on control problems; (5) searching for predators and parasites of various pests and developing methods of biological and integrated control. Sixty agricultural units have been established in the country for extension work, including plant protection, whose services are presented free of charge.

During 1966 and 1967, the following pests and diseases have been encountered. On date palm, infestations by the scale insect, Parlatoria blanchardi, though widespread in the country, were lighter in the coastal region of the Eastern Province and in the regions of Jizan and Jeddah. Predators and parasites were observed to actively attack the scale in Hofuf and Riyadh. In the latter area, severe infestations by Pseudococcus vitis were observed during the summer of 1966. The palm borers Oryctes elegans and Pseudophilus testaceus caused severe damage in the Eastern Province. The inflorescence disease Mauginella scattae was reported near Riyadh, and Graphiola phoenicis was widespread, specially in the humid coastal areas.

On citrus, Aonidiella orientalis can be found everywhere and although predators and parasites appear to attack the red scale quite actively, chemical control had to be applied. Other pests of citrus are the leafminer Phyllocnistis citrella, Papilio demoleus and Eutetranychus orientalis.

On pomegranate, the fruit caterpillars Deutorix livia and Ectomyelois ceratoniae caused heavy damage. Other less important pests were the whitefly Siphonimus granati, Aphis punicae and Planococcus citri.

Pseudococcus vitis caused severe damage to grape, on which powdery mildew (Uncinula necator) is widespread.

Wheat and barley were infested by Schizaphis gramineum, and sorghum was badly attacked by Longiunguis sacchari and to a lesser degree by Sesamia cretica.

Aphid infestation on alfalfa by Therioaphis maculata, Aphis craccivora and by Thrips spp. were often severe, while spider mites, many caterpillars and Cuscuta palaestina, caused damage in certain areas. The main diseases were Uromyces striatus and Peronospora trifolium.

On vegetables, aphids, thrips, noctuid caterpillars and nematodes were the main pests, while the economically important diseases were Stemphylium solani and Rhyzoctonia solani on tomato and eggplant, Erysiphae cichoracearum, Alternaria cucumerina and Cercospora citrullina on cucurbits, Alternaria brassicola on cabbage and Cylindrosporium sesami on sesamum. Dacus ciliatus is a major pest of melon, squash and cucumber and Earias insulana of okra.

6. SUDAN

The plant pests and diseases of major economic importance were those of cotton and sorghum as well as the weaver birds and field rats. The water hyacinth infestation of the White Nile and its tributaries continued to be a serious problem.

During the 1965/66 and 1966/67 cotton growing seasons, infestations by the jassid Empoasca lybica, the whitefly Bemisia tabaci, and Podagrica spp. were as normally expected. The bollworm Helicoverpa (Heliothis) armigera occurred in damaging numbers, and established itself as a major pest throughout the cotton growing areas. Likewise, the spiny bollworm Earias insulana, was the major pest in the Khashm El Girba Scheme on the 1965/66 and 1966/67 crops, and in the Blue Nile Pump Schemes in the 1966/67 season only. The Sudan bollworm Diparopsis watersi caused serious damage in the Nuba Mountains, Gedaref and the Blue Nile Pump Scheme south of Wad Medani. There were some outbreaks of cotton thrips, Caliothrips impurus, whilst Aphis gossypii has become an economically important pest in the Blue Nile Province. In the Nuba Mountains, infestations by cotton stainers (Dysdercus spp.) have been checked by large-scale control campaigns during rhe dead season to kill the bugs in their estivating sites. The pink bollworm was generally not of any serious importance. The blackarm disease, caused by Xanthomonas malvacearum, occurred sporadically and damage was mild but comparatively more severe than in previous seasons. The incidence of leafcurl virus was negligible. Although stem canker infection, caused by Macrophomina phasioli, was high at the seedling stage, the crop did not suffer any appreciable damage. Country-wide cotton clean-up campaigns were carried out to destroy cotton debris in fields and villages, and to eliminate alternative host plants of pests. However, Hibiscus spp. and Abutilon glaucum grow over such vast areas that it is practically impossible to eradicate them.

The most damaging pests of sorghum were the weaver birds Quelea quelea aethiopica, and the sorghum midge Contarina sorghicola. Infestations by Aphis maidis, A. sacchari, the sorghum bug Agonoscelis bubescens, Chilo spp. and Sesamia cretica were reported from many areas in the Blue Nile Province.

Large numbers of the weaver bird were destroyed by aerial spraying with an organophosphorus compound (Queletox) of low mammalian toxicity on roosting and nesting sites. BHC bait or spraying was used to control the tree locust Anacridium melonorhodon, and the grasshoppers Aiolopus savigny, Pharissa carinata and Catantops axillaris axillaris.

Field rats present a serious problem to agriculture in Sudan. The major species is Rattus natalensis macrolepsis which is responsible for damage in the Gezira and Khashm El Girba Cotton Scheme areas. The field rat campaign was carried out over an area of more than one million acres in both schemes from June to September 1965, but in July 1966, only in the latter and in scattered places in the Gezira. In the field, the rodents were controlled with poison bait containing warfarin or zinc phosphide, but in the villages only warfarin was used because of its low toxicity.

The chemical control of water hyacinth (Eichhornia crassipes) has reduced its growth in the main navigable channels of the White Nile River system and has alleviated the threat of its spread in the main Nile down river of Jebel Aulia Dam. However, there is always a high possibility of infestation of the Blue Nile and areas of the Gezira Cotton Scheme, because some of the infested rivers lie near the tributaries of lake Tana - the origin of the Blue Nile.

Chemicals for pest control and their rates of application are being recommended by the Pest and Disease Committee of the Ministry of Agriculture and the recommendations are subject to annual revision. The treatment of warehouses has become a

routine practice against storage pests. Plant Quarantine facilities in Port Sudan have been improved by the construction of fumigation chambers for the disinfestation of export and import consignments.

One of the major tasks of the Plant Protection Division is to provide technical advice and assistance to scheme managers and farmers on the control of pests and diseases. The staff of the Division has recently been augmented by twelve entomologists. During the period under review, seven FAO scholarships in locust control and one in grain storage were awarded to plant protection personnel.

7. UNITED ARAB REPUBLIC

The main pests of cotton, the country's most important crop, were the cotton leafworm (Spodoptera littoralis) and the pink bollworm. The leafworm infestation during the cotton season of 1966 appeared rather severe as compared to that of 1965 which was considered as normal. To control this pest, hand-picking of the egg masses is practised very thoroughly on large scale, so that chemical treatment during its first generation on cotton in June and early July is avoided. In 1966, the total number of egg masses collected amounted to about 5.0 billion, compared to 2.2 billion in 1965 and 8.8 billion in 1961, the year of exceptionally heavy infestation. So far, insecticides to control cotton pests have been applied by ground equipment only, but in 1967 about 100,000 feddans (1 feddan = 1.038 acres) of cotton will be treated by aircraft for the control of mid-season and late-season pests and it is expected that more areas will be so treated in future. A large-scale experiment on the control of the cotton leafworm was conducted by the addition of "salaar" oil to the water of the last irrigation of clover in early May. Almost all the moths responsible for the first generation of the pest on cotton in May and June, emerge from pupae occurring in the clover fields and, the result showed, these could be killed by the oil.

In the case of pink bollworm, the practice now followed is not to treat cotton fields until trained inspection teams, which regularly survey the area, observe an infestation of 10 percent of the green bolls in the vicinity of the villages. This procedure has eliminated unnecessary insecticidal applications over large areas. Dried cotton stalks, stored in villages for fuel, often carry infested bolls which are almost the sole source of re-infestation. It has been proved experimentally that the first generation appears in a relatively narrow belt of cotton fields close to the villages and that treating only these belts is sufficient to prevent infestation in the rest of the fields. In 1967 it is planned to apply this method throughout Upper Egypt over about 700,000 feddans of cotton. Another method, which was tested for 13,000 feddans of cotton in 1966, was the fumigation under tarpaulin of cotton stalks and bolls, which killed practically all the bollworms.

The most important cotton diseases are cotton seedling diseases caused by Rhizoctonia solani, Pythium sp. and other fungi, and fusarium wilt caused by Fusarium oxysporum f. vasinfectum. Appropriate cultural means and application of organomercuric seed dressing appear to be most effective in controlling the seedling diseases, whereas the wilt is most satisfactorily controlled by growing resistant varieties.

In the control of corn borers (Chilo agamemnon, Ostrinia (Pyrausta) nubilalis, Sesamia cretica), it was observed that the yield of summer planting (April-May) was far higher than that of the Nili planting (July-August) and that this could be partly attributed to a lower level of borer infestation of the earlier crop. Consequently, farmers were advised to grow more corn in summer and the acreage of this planting has tripled and that of the Nili planting lowered. To forecast corn pest infestations, fields were planted successively at two week intervals from April till August. These fields were examined twice a week for borer infestation and corn growers in the area

were notified for chemical treatment when the economic threshold was reached in any one of the fields. Both the measures reduced the required spraying from 600,000 feddans in 1964 to 80,000 in 1966. One of the most important diseases of corn is the late wilt caused by Cephalosporium maydis.

The domestic Nile sparrow Passer domesticus niloticus, seems to become a serious threat to agriculture. It is believed that the increase of its population is a result of the gradual destruction of birds of prey due to the widespread use of insecticides to control crop pests.

The diseases caused by plant parasitic nematodes are recognised to be among those economically important. No accurate estimates are available of the damage caused to crops but the annual loss may be evaluated at Egyptian £ 10 to 15 million. Meloidogyne javanica is the predominant species causing root knot of horticultural and field crops, while several species of Pratylenchus cause severe injury to green beans, water melon, strawberry, cotton, corn, onion, sugarcane, peach, banana and grape. Citrus slow decline, for which Tylenchus semipenetrans is responsible, is widespread in many orchards. Some crop failures may be attributed to ectoparasitic, root-feeding nematodes, of which several species have been found. It is suspected that nematodes also play an important role in some disease complexes, such as the cotton wilt complex and the late wilt complex of maize. No cyst-forming nematodes have so far been recovered from Egyptian soils.

Two cases of resistance to insecticides were reported. The cotton leafworm developed resistance to dipterex, for which endrin was substituted. However, endrin also has already partly lost its efficiency after one season and in Lower Egypt, methyl parathion is added to it. The Mediterranean fruit fly developed resistance to lindane in areas where the insecticide was used for several years. It is now being replaced by any one of the dimethoate compounds.

A unified agricultural law was issued in September 1966, and includes several articles on plant quarantine. Regulations for the import and export of plants and plant products, based on this law, have also been recently issued. A Plant Introduction Garden has been established at Alexandria.

Agricultural training centers for Afro-Asian countries have been established. Two courses on plant production and protection of three months duration were organised; one in 1965 and another in 1966. Each course was attended by about thirty participants from nearly a dozen countries. An in-service training center is also established in the Department of Plant Protection and two sessions, each lasting two months, were held in 1966 and 1967, each being attended by 30 college graduates working in the Department. A permanent training center for young college graduates employed in the Ministry of Agriculture has been functioning for about five years. Two sessions are held every year, each of three months' duration and attended by about eighty trainees. The training is given in different aspects of agriculture, including plant pest and disease control. Several training centers are organised by the Ministry of Agriculture every year in all the Governorates. They include courses on plant protection, particularly on pest control.

VI. NEAR EAST PLANT PROTECTION INSTITUTE

The Commission noted with satisfaction that in March 1966 the Government of Jordan had presented the request to the United Nations Development Programme (Special fund) for assistance in setting up a Plant Pathology and Nematology Unit of the proposed Near East Plant Protection Institute, and that a similar request for a Plant Quarantine Unit had just been presented by the Government of Pakistan. The latter Government was also giving consideration to the establishment of another Unit on Rodent Control. The Commission was informed that a request for the Unit on Weed Control was shortly to be presented by the Government of Sudan. It hoped that the Government of Lebanon would also soon present a request to the UNDP (Special Fund) for a Biological and Integrated Pest Control Unit.

The Commission recalled the views expressed in its First Session, regarding the ways in which the various Units of the proposed Institute were to function and the benefits they were to share. It was particularly pleased to note that all the Governments concerned had readily accepted the condition that the various Units of the proposed Institute were expected to serve regional as well as national interests, even though they were to be physically established as national projects. The Commission reiterated its conviction that the regional character of the Units would widen their technical scope and usefulness and enable them to play a major role in developing plant protection by creating precisely those facilities for coordinated research, surveys and training which were lacking in the Region and yet were so badly needed. For this reason, if for no other, the Commission again urged its Member Governments to examine the possibility of establishing Units on the remaining subjects, which had been earlier suggested for the proposed Near East Plant Protection Institute and which were still available for consideration. The Commission also hoped that the Government of the Syrian Arab Republic would give due consideration to the establishment of an Unit on Pesticide Application and Equipment in which their interest had been earlier expressed, as reported at the First Session.

A statement, made on behalf of the Libyan delegation, informed the Commission of the interest of the Government of Libya in establishing a General Entomology Unit. The Commission hoped that the Government of Libya would make an early decision which would result in the establishment of this Unit in the country.

It felt that these Units, when established, will not only embrace important activities of plant protection but will also be geographically well located in the Near East Region, thereby ensuring appropriate and adequate assistance in protecting the plant resources of the Region.

VII. SPECIAL PEST AND DISEASE PROBLEMS IN THE REGION

The khapra beetle (Trogoderma granarium), is known to occur in Afghanistan, Iran, Iraq, Jordan, Kuwait, Libya, Pakistan, Saudi Arabia, Sudan and the U.A.R. Although a serious pest of stored grains, its control presented no special problem in the Region.

The Commission noted that apple, pear and other fruits were sometimes severely infested by the codling moth in Afghanistan, Iran, Jordan, Lebanon, Libya, Pakistan and Syria. In Jordan, the pest had been effectively controlled by spraying with dipterex and Sevin 85 had appeared to be promising, while in Pakistan malathion had been generally used. However, the use of insecticides created the problems of toxic residues on the fruits.

In Jordan, banana plantations suffer from Verticillium spp. (cigar end rot) and Meloidogyne spp. A severe outbreak of the heart-rot disease, probably caused by the cucumber mosaic virus, was reported from Lebanon in 1964. In the U.A.R., bunchy top and chlorosis virus diseases are widespread, particularly in the coastal areas. The bunchy top and the nematode Helicotylenchus erythrinae are considered to be of major importance. No insect pest is of any significance except the aphid Pentalonia nigronervosa, which is the vector of the bunchy top virus.

The Commission was informed that a Commission for Controlling the Desert Locust in the Near East had come into being, with three Governments (Lebanon, Jordan, Sudan) depositing their instruments of acceptance of the Agreement. Two other locusts, the Moroccan locust (Dociostaurus moroccanus) and the Italian locust (Calliptamus italicus) were of some importance in Afghanistan but the former species, once considered to be a destructive pest in Syria, was no longer so due to the extension of cultivation in the areas where it formerly bred. Likewise, in Iran the Moroccan locust has not been considered important since 1958, though arrangements for its control were still maintained. The African migratory locust, Locusta migratoria migratoricides, did some damage to graminaceous crops in western Sudan (Kordofan) and occasionally moved north to the areas of the desert locust. It was also stated that the tree locust Anacridium spp., caused some damage to crops in Sudan, U.A.R., Saudi Arabia and Yemen.

Practically all countries of the Region suffered from infestations by plant parasitic nematodes and wheat, vegetable crops and citrus were particularly affected. Extensive surveys had been conducted in Jordan, Libya, Pakistan and the U.A.R. and investigations on the taxonomy, biology, ecology and control had been intensified. Control trials had also been in progress in Saudi Arabia. The Commission looked forward to the establishment of the Plant Pathology and Nematology Unit of the proposed Near East Plant Protection Institute in Jordan, which would be a major step in dealing with the problems of plant parasitic nematodes in the Region.

Spider mites were very destructive in most countries of the Region. Work on their taxonomy, biology and control had been conducted for years in Lebanon and the U.A.R., and started in Libya. The widespread use of pesticides appeared to be largely responsible for the appearance of mites in many areas.

Cotton was an important crop in Iran, Pakistan, Somali Republic, Sudan, Syria, U.A.R. and Yemen. The Commission noted that, while there were several well known and very destructive pests and diseases of the crop, their control did not present any regional problem. However, the circulation of information on cotton pests and their control among the interested countries should be very helpful.

It appeared to the Commission that adequate and planned attention to the control of weeds was generally not given in the Region. It was very important to prevent the introduction of new weeds and parasitic, flowering plants into the Region from outside sources and the spread of weeds and parasitic, flowering plants from one country or area to another within the Region. It would be helpful to prepare national lists of such plants already occurring in a country or the introduction of which could be feared. Such lists should lead to a regional list of the two categories and would also be the basis for determining appropriate quarantine action. In this connection the Commission was informed that the Government of Sudan was shortly to present a request to the United Nations Development Programme (Special Fund) for assistance in the establishment of a Weed Control Unit of the proposed Near East Plant Protection Institute.

The Commission noted that virus diseases of citrus continued to be a serious problem in many parts of the Region. The two diseases, psorosis and xyloporosis, were already established in the western parts of the Region and tristeza, though still localized in three countries and suspected in a fourth, was a standing threat, specially to the countries bordering the Mediterranean sea. Libya and U.A.R. totally prohibit the import of all propagating materials of citrus into their territories. Tristeza called for drastic quarantine restrictions as well as intensive national effort to eliminate the use of root stocks susceptible to the disease. Surveys and research, specially on the evolution of resistant root stocks, were required. However, there was urgent need to collect and evaluate the information already available in the Region and to use such an evaluation against the background of the knowledge available from outside the Region.

Rodents were a serious problem in agriculture in Pakistan, Sudan and other parts of the Region. In the field, they ate seeds and seedlings and damaged crops at all stages. Along with the insects, rodents were the main cause of losses of grains and other agricultural products during storage. In general, estimates of losses caused by field rats were fragmentary. As attention is drawn to the growing menace of field rats as agricultural pests, the fact emerges that, while damage wrought during an outbreak is spectacular and alarming, the more insiduous loss, due to the constant activities of the rodents infesting crop-growing areas, is not generally appreciated. While some work has been done in a few countries of the Region, much still remains to be learned concerning the biology, ecology and population dynamics of rodents. The species infesting different areas are also only partially known and so are their migratory movements. Even in the direct control of rodents, the problem of their resistance to certain rodenticides has been added to the older ones of bait-shyness, suitability of carriers in baits and safety considerations. It was also important to explore how and to what extent rodent control in the field could be integrated with that in the urban areas, so that beneficial results could be achieved both for agriculture and public health. Furthermore, investigations on rodents could be used to develop control techniques which should be applicable in many countries of the Region. The Commission was, therefore, of the opinion that research on rodents and their control could be most usefully undertaken within the framework of the proposed Near East Plant Protection Institute and with the assistance of the United Nations Development Programme (Special Fund) and the FAO.

In this connection the Commission was informed of the joint action which WHO and FAO were taking to promote research on rodent control. To start with, action would include the compilation of available information on the biology, ecology and control of rodents and the preparation of a bibliography. Consideration was also to be given to rodent species infesting both rural and urban areas and to the evaluation of rodenticides which could be used in different areas and under different conditions.

VIII. EFFECTS OF THE WIDESPREAD USE OF PESTICIDES

The Commission noted that resistance to toxaphene and other chlorinated hydrocarbons during the past several years and to dipterex in 1965 on the part of the cotton leafworm (Spodoptera littoralis), had been encountered in the U.A.R. Likewise, the Mediterranean fruit fly had shown some resistance to gamma BHC. Cases of resistance to endrin by the spiny bollworm (Earias insulana) in Iraq and by the sugarcane pyrilla in Pakistan, and to toxaphene by cutworms in Jordan had also been reported. In Libya, malathion had been used on citrus to control the Mediterranean fruit fly during the past 6-7 years and this treatment also killed the adults of the red spider mite (Tetranychus telarius), and the privet mite (Brevipalpus obovatus) in the earlier years. Lately, however, malathion no longer controlled the mites, which seemed to have developed resistance to the insecticide. The use of carbaryl on cotton and other crops has been followed by the abnormal appearance of the white fly (Bemesia tabaci) in Sudan. The importance of investigating the causes leading to development of resistance in insects, mites and rodents to pesticides, was pointed out. It was generally agreed that it is not wise to use the same insecticide against the same insect in the same environment for several years successively.

The Commission's attention was drawn to the growing use of pesticides on horticultural crops and the poisoning risks involved to consumers of the freshly harvested products, specially those eaten raw. Knowledge of the persistance of pesticidal residues on such products in the Region and the degrees of their harmfulness after different time intervals and under different conditions, was lacking. Marketing processes, if any were involved or followed, did not necessarily eliminate the risks. And yet it was important that the harmful consequences of pesticidal treatments should be made known to fruit and vegetable growers, marketing agencies and consumers. The consequences may not always lead to acute poisoning but may appear in the gradual accumulation of poisons in the body system. Above all, measures must be adopted to ensure that fruits and vegetables, before they are eaten raw, cooked or canned, carry no harmful pesticide residues.

Measures against risks of pesticidal poisoning through eating fresh fruits and vegetables were in force in some countries of the Region. In the U.A.R., time limits of 2-3 weeks were prescribed between the last application of pesticide and the first harvesting in the case of beans, groundnut and other crops. In Iran and Sudan the use of parathion was forbidden by law. In Saudi Arabia only insecticides of low toxicity were used on vegetable crops. In Libya, parathion was used only under special restrictions and in some cases the number of days between pesticidal treatment and harvesting was prescribed. There were also health laws in the country to prescribe safety margins. In Jordan, phosphorus insecticides could only be purchased by a permit issued by the Plant Protection Division. It was pointed out that, while phosphorus compounds may break up in the soil within 24 or 48 hours and become harmless, it was not known how long they may remain toxic on leaves and fruits under conditions existing in the Region. However, there were other pesticides which were not so unstable.

Apart from the crops and harvested produce, pesticidal residues could also occur or accumulate in the soil. There was hardly any information as to what effect, if any, such residues had on injurious or beneficial organisms in the soil or on crops grown subsequently on such soil.

The Commission felt that it was extremely important to exercise great caution in recommending pesticides for the control of horticultural pests and diseases. For this purpose, the countries of the Region should have all available information on tolerance limits for various pesticides and the persistence of pesticidal residues

on crops and in soils and should endeavour to adapt such information to their own countries. In this connection the Commission recalled that in its first Session in 1965, it had recommended that "governments should exercise strict control over the importation, distribution, sale, storage, transport, handling and use of pesticides and that, wherever possible, restrict the use of dangerous pesticides by substituting them with those less dangerous." The Commission urged the governments to implement this recommendation wherever it had not yet been done.

IX. SPECIAL PROBLEMS IN PLANT QUARANTINE

The Commission was informed that, while there was some system of inspection of plant materials in ships, there was practically none as far as aircraft were concerned. Yet there were growing possibilities of the carriage of plant pests and pathogens, through fruits and vegetables and other plant products, to the different parts of the Region by means of aircraft, whether arriving from countries outside the Region or moving from one country of the Region to another. Such possibilities were not without risks of introducing or spreading plant pests and diseases in the Region and it was important that such risks should be minimized. It was appreciated that the inspection of an aircraft presented problems for the international airlines but the risks justified a measure which may not be entirely convenient. It was generally agreed that such inspection should be limited to cargo aircraft carrying plants or plant products.

It was pointed out that fumigation with methyl bromide will not kill insect eggs inside fruits, unless excessively high dosages are used which will injure the fruits, but that where this was required ethylene dibromide was the fumigant used.

The Commission noted that several countries in the Region had set up services and installed equipment for plant quarantine inspections and treatments. Iran, Iraq, Jordan, Libya and Pakistan had basically revised their plant quarantine laws and regulations, and Saudi Arabia was in the process of enacting such laws and regulations. Some countries had prepared lists of plant pests and diseases which they did not want introduced into their territories from within or outside the Region. It was pointed out that the preparation of quarantine lists will be facilitated when the national lists of plant pests and diseases are available complete with all pertinent information from all the countries of the Region. Stress was laid on the inclusion of weeds and parasitic, flowering plants in the national quarantine laws and regulations.

There were no postentry plant quarantine facilities in the Region. However, a beginning could be made by instituting such facilities at the newly established Plant Introduction Garden in Alexandria, with the concurrence and cooperation of the U.A.R. Government. It was noted in this connection that generally the phytosanitary certificates, issued by the countries of the Region, were in the form prescribed as a model in the International Plant Protection Convention of 1951.

The Commission was informed that, despite its recommendation in its First Session that the governments of the countries, which had not adhered to the International Plant Protection Convention, should do so, the number of the countries in the Region adhering to the Convention had continued to be three. The Commission hoped that the governments concerned would give attention to its earlier recommendation on the subject.

X. PLANT PEST AND DISEASE SURVEYS AND REPORTING SERVICES

In some countries, surveys were conducted to determine the incidence of specific plant pests and diseases so as to plan control operations. In a few, special surveys are occasionally organized and specific facilities for this purpose exist in the Ministry of Agriculture. It was pointed out that a few countries need guidance and assistance in determining the nature of surveys and organizing them. The identification of insects, mites, nematodes and pathogens was required in many countries but generally such identifications could be arranged. The U.A.R. had facilities for the identification of the races of wheat and barley rusts and also for some fungi, nematodes and insects. In this connection it was pointed out that the circulation of technical papers among the countries of the Region should be encouraged. Attention was drawn to the need for continually improving the national reporting services within the countries themselves so that full and quick arrangements could be made to control plant pests and diseases in time.

XI. ESTIMATES OF DAMAGE OR LOSSES CAUSED BY PLANT PESTS AND DISEASES

Estimates of crop damage and of resultant losses have continued to be made in the countries of the Region in respect of individual crops or groups of crops and also according to seasons, pests and diseases. Though the estimates were generally based on observation and experience, they were not always and necessarily far wrong for that reason. There were, however, hardly any estimates based on crop cutting or any other type of planned experiments in the field. The Commission reiterated its view, expressed in its first Session, that the "estimation of crop damage was a field in which there could be fruitful cooperation between the Near East Commission on Agricultural Statistics and itself" and that "plant protection specialists may make increasing use of locally available statisticians to review methods for estimating crop damage of the resulting losses."

The Commission accepted a suggestion of the Secretary of the Near East Commission on Agricultural Statistics that a joint Working Group of the two Commissions be set up to determine and advise how best the work on estimations be organized. The Commission nominated one plant protection specialist from Jordan and the U.A.R. respectively to serve on this Working Group, the individual specialists being left to the countries to select. The statisticians will be selected by the Commission concerned with that subject. However, since it may be some time before a meeting of the Working Group could be convened because of lack of funds, the Commission hoped that in the meantime some attention to the problems of the estimation of crop losses and of the determination of samples for quarantine inspections could be provided by the Near East Commission on Agricultural Statistics in its own way.

The Commission also considered a study, presented by the Plant Production and Protection Division of the FAO, on the "Impact of Pre-harvest Crop Losses, due to Diseases and Insects, on Production in the Near East." It noted with interest that this was the first attempt of its kind for the Region, even though a few countries had not been included in the study and that losses sustained through locusts, rodents, weaver birds, weeds and possibly mites and nematodes had not been taken into consideration. A significant contribution of the study lay in its exposition of the impact

of the losses on agricultural production, by pointing out that an appreciable proportion of the land, labour, seeds, fertilisers, water and other resources, used up in farming, could be released or utilised for additional production if the benefits of plant protection were fully achieved.

The Commission's attention was drawn to the fact that the study had omitted Libya, Pakistan and Somali Republic. It was also pointed out that the estimates presented in the study relied more on individual judgements than on established facts and for that reason were in most cases unrealistic. Even the bases of the estimates were not very correct. Estimates for Iran, for example, were not only too high but also showed losses by diseases to be greater than by pests, while the reverse was the case, according to all known judgements and experiences in the country. The general feeling was that the study of the kind presented should be undertaken by a group of specialists from the Region itself, who may have close associations with agriculture in the countries, though the group may be assisted by other specialists.

It was explained that the study had been designed merely to provide a working basis and to help the countries to check on the information presented. By their very nature the assessments could not be even near accurate but a beginning had to be made somewhere. In any case, the study was to be revised before it could be used in the Indicative World Plan for the Near East Region. The selection of the countries for the study was largely a matter of working convenience and the omission of the three countries was due to the intention to include them in other appropriate sub-regions.

XII. TRAINING IN PLANT PROTECTION

In several countries of the Region there were arrangements for holding regular in-service training courses for plant protection personnel at more than one level. In a few countries, training in plant protection was also included in the general agricultural training of extension workers. The deputation of scientific officers to foreign institutes and universities for specialised training in the different fields of plant protection was being continued. It appeared to the Commission that most countries of the Region were well appreciative of the need for technical training of a high standard. Even so, the Commission urged the countries to avail themselves of every opportunity to provide specialized training to their officers at well established institutes or universities by making some bilateral or other arrangements whenever the countries themselves could not afford to finance the training. Such specially trained personnel will prove valuable in organizing research and training within their own countries on their return.

XIII. RECOMMENDATIONS

1. THE COMMISSION,

Being well aware of the great importance of citrus production in the Region and of the susceptibility of citrus plants to attacks by virus and other diseases, notably, tristeza, xyloporosis and psorosis;

Realizing that sufficient surveys and scientific studies on the diseases have not yet been carried out in the Region and that the results of whatever has been done have neither been technically evaluated nor even widely known;

Appreciating that the control of the diseases was as much dependent on measures of plant quarantine as on direct, curative treatments;

Convinced that the most effective way of dealing with the diseases was to treat them as a regional problem and to base required actions on regional cooperation;

Recommends that:

a. a Working Group of three member countries (Jordan, Libya, U.A.R.) be formed to evaluate all available information and results of research on virus and other diseases of citrus and that such an evaluation be presented to the Third Session of the Commission, after being circulated through its Secretariat, to the member countries at least one month in advance;

b. the Working Group conduct its work by correspondence till such time as the FAO may find funds for holding one meeting of this Working Group;

c. the countries give consideration to the establishment of the Unit on virus diseases of economic plants of the proposed Near East Plant Protection Institute.

2. THE COMMISSION,

Noting that rodents are a serious problem of agriculture in the field, as well as in storage, within the Region;

Recognizing that knowledge concerning the biology, ecology, economic damage and control of field rats is still far from adequate;

Realizing that effective control may give immediate returns by reducing losses and waste;

Recommends that:

a. the countries of the Region encourage scientific studies on field rats and their control;

b. research on rodents and methods of their control, including the evaluation of new rodenticides, be undertaken on a regional basis in a Rodent Control Unit of the proposed Near East Plant Protection Institute.

3. THE COMMISSION,

Concerned at the increasing use of pesticides on horticultural crops;

Being aware that many fruits and vegetables are eaten raw after being freshly harvested and that they may carry toxic, pesticidal residues, the consequences of which may not be generally appreciated;

Recognizing the imperative need to reduce the risks of pesticidal poisoning to the very minimum;

Recommends that:

a. the pesticides used in horticulture be those which have been proved to leave no harmful residues, consistent with their effectiveness against pests and diseases;

b. studies should be initiated, in collaboration with horticulturists and other specialists concerned, to determine what may be the safest ways to use pesticides on horticultural crops and what measures may be devised to ensure that fruits and vegetables picked from pesticide-treated plants are safe for consumption.

4. THE COMMISSION

Noting that many parasites and predators of pests have already been recorded in the Region;

Recognizing that biological control, alone or integrated with other methods, may reduce the cost of plant protection measures and the use of pesticides, thereby minimizing the hazards of chemical control;

Recommends that:

a. the exchange of appropriate entomophagous insects among the countries be encouraged;

b. the Member Countries should prepare a list of those beneficial insects they can supply and transmit it to the FAO Regional Office in Cairo for circulation to Member Countries and for consideration by the Commission.

5. THE COMMISSION,

Noting that pesticides have come into widespread use in the Region as a quick means of controlling plant pests and diseases;

Appreciating that the use has led to some undesirable side-effects, such as toxic residues on crops and in soils, destruction of beneficial insects, and resistance to insecticides on the part of insects.

Realizing that quick results sometimes obtained from the use of pesticides may lead to a neglect of scientific studies which must generally provide the basis for sound control measures;

Being well aware that methods of control, other than that by means of chemicals, may in certain circumstances partially or wholly replace the use of pesticides;

Recommends that:

a. the countries of the Region encourage biological and ecological studies on plant pests and pathogens;

b. attention should also be directed towards exploring the possibilities of biological, cultural and other methods of control as well as of integrating amy of these methods with that of the chemical method, if necessary.

6. THE COMMISSION,

Being well aware of the constant movement of weed seeds, mixed in with grains and other agricultural commodities, in the Region;

Having learned that the quarantine laws and regulations of many countries in the Region did not specifically prevent or restrict the accidental import of weeds or weed seeds;

Knowing that many of the weeds were proving extremely troublesome in crop fields and orchards in most areas of the Region;

Appreciating the need to restrict the spread of weeds to the maximum extent possible;

Recommends that:

a. the countries of the Region, which do not yet have specific laws or regulations to prevent the introduction or spread of weeds and weed seeds, should incorporate provisions for such a purpose in their plant quarantine laws and regulations;

b. the countries of the Region should prepare lists of weeds not known to occur in them and whose introduction may occur and must be prevented;

c. such lists should be circulated in the Region through the Commission's Secretariat.

7. THE COMMISSION,

Concerned with the growing possibilities of the carriage of plant pests and pathogens, through fruits and vegetables and other plant products, to the different parts of the Region by means of aircraft;

Appreciating the danger of the introduction or spread of plant pests and diseases in new areas in the Region;

Realizing the need for effective checks to such introduction and spread;

Recommends that:

a. FAO approach the International Air Traffic Association to induce international airlines to cooperate with the national plant quarantine services by allowing and facilitating the inspection and any appropriate disinfestation or disinfection treatment of cargo aircraft coming into any country of the Region;

b. all refuse vegetable material, coming out of an international aircraft, whether in transit or terminating at any international airport in the Region, should be forthwith incinerated under the supervision of the plant quarantine service of the country concerned.

Appendix A

Address by His Excellency Mr. Mohamed Bek Derna, Minister of Agriculture and Animal Wealth, Libya

I have the pleasure to greet you all, on behalf of the Government of the Kingdom of Libya, to the Second Session of the Near East Plant Protection Commission.

We should like to express our great satisfaction and deep appreciation to the Food and Agriculture Organization of the United Nations, for convening such meetings, as a part of its commendable endeavours to combat food shortages, by increasing and protecting the agricultural production for the welfare of humanity.

This meeting will, no doubt, provide opportunities to the countries of the Region to exchange views and experiences in the field of plant protection, and to study the programmes and projects of the Region, aiming at minimizing the damage and losses caused by plant pests and diseases.

In this connection, I should like to mention the great importance attached, by the Government of the Kingdom of Libya, to the agricultural sector as a whole, thanks to the guidance and patronage of our King. May God The Almighty safeguard him.

Even though we have made great advances in this respect, we still feel that there is considerable amount of investigations, research and hard work to be undertaken, not only in this country and Region, but in most parts of the world, before the full benefits of Plant Protection could be realized.

We sincerely wish you every success in your work in this session, and hope that your deliberations will result in recommendations which will be of great value to the countries of the Region. We are convinced that efforts of this kind will contribute very substantially to the welfare of the people everywhere.

Finally, I welcome you once again, and wish you all a pleasant stay in our country.

Appendix B

Inaugural Speech by Dr. A.R. Sidky, Assistant Director-General for Near East Affairs, FAO

On behalf of the Director-General of the Food and Agriculture Organization of the United Nations, it is again my privilege to welcome you to the Second Session of the Near East Plant Protection Commission, as I did to the First in Amman, Jordan, in June 1965. The Commission is thus meeting very nearly after two years, as is prescribed in its Rules of Procedure. Two years are not a long period in the agricultural history of a country or region but they are long enough to review broadly the progress of plant protection in the Near East and to determine what fresh or further steps may be taken to accelerate progress in the required directions. That, I believe, is in short your task in this Session.

The two years have seen the desert locust in one of its periods of recession and the utilisation of this period of comparative calm to continue surveys of some suspected breeding areas, conduct research in certain directions, improve national facilities and services for locust intelligence and test promising or new control techniques. However, there has been no such respite in the case of other plant pests and diseases, which have continued to cause heavy damage to crops and crop produce and to make heavy demands on the national plant protection services. Infestations by plant parasitic nematodes, specially in irrigated areas, and by spider mites have been on the increase and both have particularly affected fruits and vegetables, the production of which must be raised not only for home consumption but also for export. The blue mould disease of tobacco, which was unknown in the Near East till 1961, has now spread to six countries of the Region, thereby highlighting the need for effective plant quarantine. Bad enough as the plant pest and disease epidemics may be, they have not always been as unusual or unexpected as the problems that their control has sometimes created. I refer to insect resistances to insecticides, appearance of new pest infestations following the use of pesticides to suppress other, toxic residues in crops and soils left by pesticides, physiological disturbances caused in plants by the use of pesticides, introduction of new pests and diseases from outside sources and such others. You have some of these problems listed for consideration in the Provisional Agenda of this Session.

The two years have also witnessed the Near East Plant Protection Commission in action and the coming into being on 21 February 1967 of an allied Commission for Controlling the Desert Locust in the Near East. The latter Commission will be an important link in the chain of regional bodies set up for the control of a crop pest of such major importance. It will also take over the functions of the FAO Arabian Peninsular Desert Locust Control Sub-Committee which has existed since 1953, though in the earlier stages under a slightly different name.

The First Session of the Plant Protection Commission made eight recommendations and also outlined a rather comprehensive programme to be followed over the years, some parts of which have been under implementation. Bimonthly reports on plant pests and diseases in the Near East have continued to be issued from our Regional Office in Cairo. Some member countries of the Commission have compiled national lists of insects and other pests and diseases and several of the lists have been published. Three of them have so far been circulated in the Region and others will be. By these and other means, we believe the Member countries have become increasingly aware of both, national and regional problems of plant protection and this awareness may help to identify the areas where regional cooperation may be most fruitful. Unfortunately, not much headway has been made in the establishment of the proposed Near East Plant

Protection Institutes, earlier recommended by regional FAO meetings. Only one Government, out of the four which accepted to have such Institutes, has so far presented its Request for assistance to the United Nations Development Programme (Special Fund), though the three others also have had their Requests prepared and ready. We in the FAO have been only too willing to provide all possible support for the projects, because we are convinced that, as in the case of the Near East Animal Health Institute, the Plant Protection Institutes must play a major role in developing plant protection by creating precisely those facilities for coordinated research, surveys and training, which at present are lacking in the Region. That role, in turn, must help to substantially add to agricultural production by saving what may otherwise go to waste in more ways than one.

There have also been considerable intensification and expansion of plant protection activities in the Region during the two years. While I have no doubt the activities have appreciably reduced crop damage, it seems to me that something more is required to ensure their full success. It is not enough that we make extensive use of pesticides to control agricultural pests and diseases; we must also have the established means to take the fullest advantage of new scientific and technological developments in the production of pesticides, in the integration of chemical with biological and other means of control, in the evolution of resistant varieties, in the use of irradiation for insect studies and pest control, in application techniques and in other related fields. At the same time there must be a continuing study of the economic levels of crop losses, sustained through pests and diseases, and of the costs incurred or involved in preventing them. No less than important should it be to determine how plant pests and diseases, apart from the direct damage that they may cause, may influence various production programmes. For example, the benefits of the use of water and fertilisers may be markedly reduced if the crops are attacked by pests and diseases in the course of their growth. It goes without saying that studies in plant protection cannot be divorced from the other factors of agricultural production. Many such studies cannot be limited to national boundaries or resources and may be most appropriately undertaken by the proposed regional Plant Protection Institutes of which I have just spoken.

The general, overall estimate of 20 percent of the value of crops in the Near East, annually lost through pests and diseases and considered, as nearest to reality by the Seventh FAO Regional Conference for the Near East in October 1964, has not been lowered by any other estimate that I know of. And yet it is important to know what impact plant protection is making or can make on agricultural production. Last year, the Plant Production and Protection Division of the FAO produced a study on the "Impact of Pre-harvest Crop Losses, due to Diseases and Insects, on Production in the Near East", as a very preliminary contribution towards the Indicative World Plan for Agricultural Development, 1965-1985, in the Near East. The study has estimated losses of specific crops or groups of them in eleven countries of the Near East, sustained through diseases and insects but not through some other agencies, such as, locust, rodents, weaver birds and weeds. Even so, the total losses in respect of some individual crops, estimated for the two-year period 1961-1963, have ranged as high as 40 to 50 percent and losses between 25 and 35 percent are common enough in the tables presented. By the very nature of the assessments involved, the estimates cannot be accurate but they appear to be sufficiently indicative to deserve attention. Incidentally, the study also points out, what is generally not appreciated, that pests and diseases not only lower the quantity and sometimes the quality of the harvested produce and increase the cost of production, but they also create demands for more land, more seed and more labour and other inputs, which must be provided to obtain the required food and other harvests, but which should otherwise have not been required. While on this subject, I may also inform you that the various problems, connected with the accurate evaluation of losses will be the main theme of a FAO Symposium on Crop losses to be held in Rome next October.

By their very nature plant pests and diseases are a reality which no farming community can expect to escape and, therefore, the constant aim must be to reduce this reality to a point where it may fade into economic insignificance. That obviously is the contribution which plant protection must make to agricultural production. That contribution can be and must be substantial in the Near East Region, where plant pests and diseases are as numerous and as destructive as any where else, where crop yields are not as high as they could be, where rocks and deserts limit the utilisation of land and where agriculture has to co-exist with oil in some ways and in some areas. The Near East Plant Protection Commission is intended to assist in the processes by which the contribution of plant protection may be made increasingly effective and effectively sustained. This role of the Commission is based on the widely accepted view that, not only in plant protection but in other fields of agriculture as well, very much more can be achieved in shorter periods and at lower costs by regional cooperation and coordinated action than by isolated national efforts. The FAO has long held fast to this belief.

Following the declaration of Independence in 1951, the Government of the Kingdom of Libya were quick to avail of FAO's assistance in the fields of agricultural production, including plant protection, marketing, agricultural statistics and forestry and the assistance has continued since in one field or another. However, apart from receiving assistance, Libya can also contribute towards FAO-sponsored, regional plans and projects out of its own experiences and by way of its cooperation. For this reason, if for no other, we have been happy at this Session being held in Libya, which represents the western-most area of our Near East Region. This country too has some of the same problems of plant pests and diseases as the other countries of the Near East. It has been active too in plant protection research and its application. Although modern systems of communication and transport have brought countries closer, the facts of geography are sometimes hard to obliterate. And so it fortunately happens that the Near East Plant Protection Commission meeting in Tripoli provides the opportunity to learn something of plant protection in Libya at close quarters and to discuss the common problems of the Near East Region against the setting of a national economy based on the twin resources of oil and agriculture.

Before I conclude, I must express on behalf of the Food and Agriculture Organization of the United Nations and on my own our sincere thanks to the Government of the Kingdom of Libya for their kind invitation to hold the Second Session of the Near East Plant Protection Commission in Tripoli. I must also thank His Excellency The Minister of Agriculture and Animal Wealth for finding time to be present on this occasion and to address this Session.

Appendix C

Agenda

1. Opening of the Session
2. Election of Chairman and Vice-Chairman
3. Adoption of the Agenda
4. Election of Members of the Executive Committee
5. The Commission and its Work during 1965-66. Statement by the Secretariat
6. Current Situation and Developments in Plant Protection. Statements by the Delegates
7. Special Plant Pest and Disease Problems in the Region:
   - (i) Khapra beetle (*Trogoderma granarium*)
   - (ii) Codling moth (*Cydia pomonella*)
   - (iii) Pests and diseases of banana
   - (iv) Desert and other locusts
   - (v) Plant parasitic nematodes
   - (vi) Spider mites
   - (vii) Pests and diseases of cotton
   - (viii) Weeds and parasitic flowering plants
   - (ix) Other pests and diseases, notably of citrus and groundnut
8. Effects of the Widespread Use of Pesticides:
   - (i) Insect resistance and other effects
   - (ii) Pesticidal residues
   - (iii) Possible hazards
9. Special Problems in Plant Quarantine
   - (i) Ship and plane inspection
   - (ii) Use of methyl bromide in fumigation
   - (iii) Inspection and treatment of plants and plant products moving in international trade and traffic

(iv) Pests and diseases of plant quarantine importance to and in the region

(v) Postentry plant quarantine facilities.

(vi) Use of international phytosanitary certificate

10. Plant Pest and Disease Surveys and Reporting Services:

(i) Organization of surveys

(ii) Regional and National reporting services

11. Estimates of Damage or Losses caused by Plant Pests and Diseases

12. Training in Plant Protection

13. Other business

14. Adoption of the Report

Appendix D

Statement by the Secretariat

Administrative and Procedural

1. The Commission's First Session was held in Jebeiheh-Amman, Jordan, from 7 to 14 June 1965. The Session adopted the Rules of Procedure of the Commission. The Rules were subsequently approved by the Director-General of the FAO and the approval was communicated in his letter of 15 December 1965 to Mr. Sami Ayoub, Chairman, Near East Plant Protection Commission, c/o The Ministry of Agriculture, Jordan, Amman. The approval, however, was subject to confirmation by the forthcoming Session of the FAO Conference.

2. This confirmation was accorded by the Thirteenth Session of the FAO Conference, held in Rome from 20 November to 9 December 1965 and the fact communicated by the Director-General in his letter of 1 March 1966 to the Chairman of the Commission.

3. The Report of the First Session of the Commission was transmitted by the Director-General of the FAO to the Member Governments (of the Commission) with his letter of 7 March 1966. In doing so, the Director-General drew special attention to the first Recommendation, made in the Session, relating to the compilation and distribution of information on plant pests and diseases in the Near East and the need for Regional cooperation in this endeavour.

4. The Regional Plant Protection Specialist in the FAO of the United Nations Near East Regional Office at Cairo, U.A.R., functioned as the Secretary of the Near East Plant Protection Commission.

Executive Committee of the Near East Plant Protection Commission

5. It is regretted that due to various reasons no meeting of the Executive Committee could be held, although a suggestion to this effect had been made by one of its Members. However, Members of the Committee as well as the Member Countries and the League of Arab States were kept informed of the developments in the work of the Commission, verbally or by correspondence.

Technical

6. The First Session of the Commission had laid down a program of future work of the Commission. This program was intended to be a continuing program and not limited to any specific period. Efforts were accordingly made to implement as much of the program as possible.

(i) The bimonthly Reports on Plant Pest and Disease Situation in the Near East Region continued to appear and to be distributed on time. The coverage was not as full as could be desired but the cooperative response from the Member Countries was better than in the past. Beginning with the Report No. 21, May 1966, a new feature on RESEARCH was added. In the following issue (Report No. 22) the feature was broadened to include information on recent publications, dealing with various aspects of plant

protection. Incidentally, the Reports have attracted attention in many countries outside the Region and there have been many demands for the supply of the Reports. Over 100 copies are now being mailed to various addresses.

(ii) Till 15 April 1967, lists of plant pests and diseases were received from Iran (insect and mite pests and virus diseases), U.A.R. and Yemen and a list of insect pests only from Pakistan. Crop-wise names of pests and diseases were also supplied by Lebanon. Typed or published lists of insects, mites, nematodes, fungi, bacteria and viruses, with varying degree of information, have also been available from many countries of the Region. Some of the lists have needed editing and processing before circulation and the published lists, being limited only to one or two copies, could not be distributed. So far, the lists from Pakistan and the U.A.R. have been circulated to all Member Countries.

(iii) Efforts were made but have so far not been successful to organize a Regional training course in plant protection. The major difficulty has been that of finding the necessary funds.

(iv) Some progress has been made towards the establishment of Near East Plant Protection Institutes. Jordan submitted its Request (on 21 March 1966) to the United Nations Development Programme (Special Fund) for assistance in establishing an Institute on Plant Pathology and Nematology. Requests for assistance for similar institutes on Biological and Integrated Pest Control in Lebanon, Plant Quarantine in Pakistan and Weed Control in Sudan have been ready, but for one reason or another have not yet been actually presented to the UNDP.

(v) The Recommendation to prepare a basic or model plant quarantine law, which the Member Countries could use in framing or amending their own, national plant quarantine laws, was welcomed in particular by Pakistan. However, due to pressure of work, it has not so far been possible to prepare the draft of the basic plant quarantine law.

(vi) Contacts were made with the Near East Commission on Agricultural Statistics, through its Secretary, the Regional Statistician, with a view to receiving advice and assistance from statisticians in the assessment of crop damage or losses, caused by pests and diseases, in certain types of surveys on plant pests and diseases and in sampling techniques and procedures in plant quarantine inspections.

(vii) Various personal discussions were held in Afghanistan, Iran, Iraq, Jordan, Lebanon, Libya, Somali Republic, Syria and the U.A.R., regarding the Commission's work and activities.

Membership of the Commission

7. As at 15 April 1967, the following countries had become Members of the Near East Plant Protection Commission:

Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Pakistan, Saudi Arabia, Somali Republic, Sudan, Syria, United Arab Republic and Yemen.

8. It is hoped that Afghanistan may also join the Commission. When this happens the Commission would be fully representative of all the fourteen countries of the Near East Region.

Acknowledgement

9. The Secretariat wishes to express its thanks for much valuable cooperation and advice received, verbally and by correspondence, from several countries of the Region as well as from the League of Arab States. The Secretariat is particularly grateful to the Chairman of the Commission for his valuable guidance.

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